



*Flexider<sup>®</sup> USA*

## FCCU Expansion Joints

*Flexibility & Quality for the Global Market*

### INTRODUCTION

The types of expansion joints used in Fluid Catalytic Cracking Unit (FCCU) service are some of the most critical expansion joints manufactured—operating at moderate pressures, high temperatures, large movement conditions, and very aggressive media.

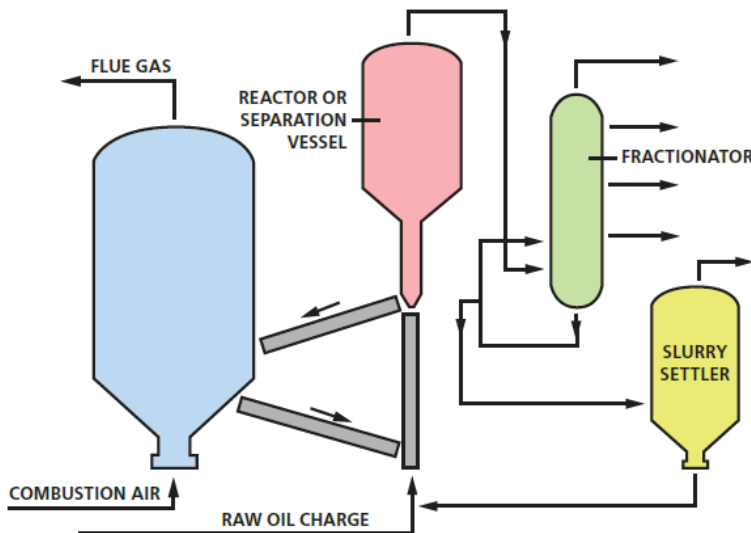
### OUR PRODUCT

Hyspan FCCU expansion joints are customized, engineered expansion joints. They are designed and built as per licensors specifications and requirements: Honeywell UOP, ExxonMobil, Technip, and KBR. The FCCU expansion joint bellows section features a double-ply testable solution for monitoring in the event of an inner ply failure. Each ply is designed to operate independently to avoid an external leak to the environment.

### MATERIAL

Due to the extreme operating conditions, FCCU expansion joints are fabricated from “exotic” materials. In our over fifty years of business, we have developed the expertise and experience to properly work with these materials:

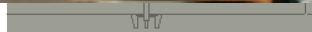
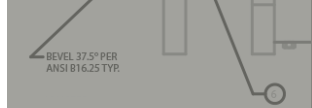
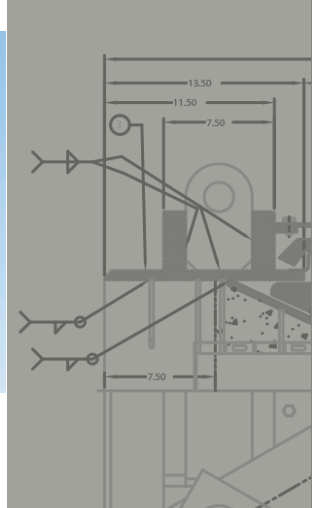
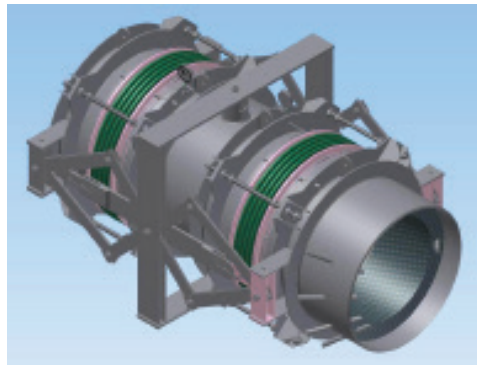
- Inconels
- Incolloys
- Austenitic Steels



### APPLICATION

- Fluid Catalytic Cracking

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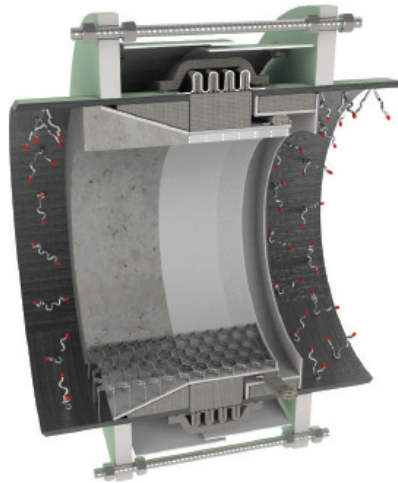
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### DESIGN TYPES

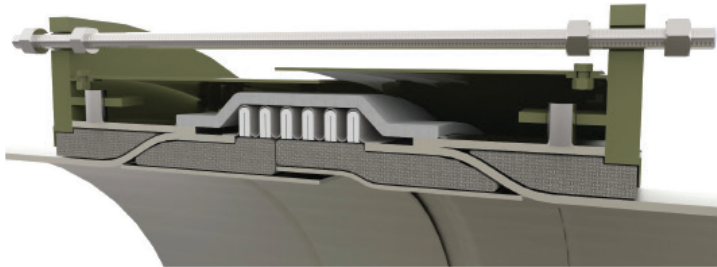
There are two types of expansion joints used in FCCU:

**“Cold Wall”** expansion joints incorporate high density vibracast refractory lining to reduce the shell/pipe wall temperature. Flue gas and catalyst media temperatures may be as high as 1400° F with shell temperatures below 650° F.



Cold Wall Expansion Joint for Flue Gas Service (cross-section)

**“Hot Wall”** expansion joints have an abrasion resistant lining to protect the piping from catalyst fines in the flue gas. Lined and unlined hot wall expansion joints are designed for full flue gas temperatures.



Hot Wall Expansion Joint for Flue Gas

### FCCU expansion joints and hardware (accessories) include:

- Gimbaled
- Pantographic Linkages
- Restrained Universals
- Pressure Balanced
- Hinged

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Hot Wall Universal Gimbal Expansion Joint



Cold Wall Standpipe Expansion Joint with Pantograph Hardware



Tied Universal Elbow Expansion Joint



Hot Wall Single Gimbal Expansion Joint

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